PHYSICS

1. A stone is dropped from the tip of a tower with zero initial velocity. It reaches the ground in 4 second: Then the Height of the tower is ($g = 9.8$ ms^{-2})

   1) 176:4 m

   2) 78.4 m

   3) 39.2 m

   4) 384.1 m

2. The weight of the body is 19.6 N, the mass of the same body is ($g = 9.8$ ms^{-2})

   1) 19.6 kg   2) 9.8 kg

   3) 4 kg   4) 2 kg

3. A monkey is sitting in the pan of a spring balance kept in an elevator. The reading of the spring balance is maximum when the elevator

   1) is in stationary

   2) accelerate upwards

   3) falls freely

   4) accelerate downwards

4. Which one of the following body is having highest potential energy at a fixed point ?

   1) a body of mass 2 kg is placed at a height of 6 m

   2) a body of mass 3 kg is placed at a height of

   3) a body of mass 4 kg is placed at a height of 4 m

   4) a body of mass 5 kg is placed at a height of 3 m

5. The property of Anomalous Expansion of water happens between the temperature

   1) 0°C - 4°C

   2) 0°F —4°F

   3) 0K-4K

   4) 0°C — (–4°C)

6. An object is placed at a distance of 20 cm infront of a concave mirror of focal length 20 cm. The image formed is,

   1) Virtual and inverted

   2) Real, inverted and diminished

   3) Real and erect

   4) Real, inverted and same size as the object

7. Which of the following factor does not affect the velocity of sound ?

1) Elasticity of the medium

2) Density of the medium

3) Pressure of the medium

4) Humidity of the medium

8. The direction of magnetic field lines produced in a current carrying conductor can be determined by

1) Right hand thumb (grip) rule

2) Fleming's left hand rule

3) Fleming's right hand rule

4) Faraday's laws

9. Two bodies of masses 1 kg and 2 kg are separated by a distance of 1 m on the surface of the earth, then the gravitational force between these two bodies is

1) $1 \times 6.673 \times 10^{-11}$ N

2) $2 \times 6.673 \times 10^{-11}$ N

3) $3 \times 6.673 \times 10^{-11}$ N

4) $4 \times 6.673 \times 10^{-11}$ N

10. A celestial object having huge amount of matter compressed into a very small region with intense gravitational field is

1) Black Hole

2) Neutron star

3) Pulsars

4) Quasars

11. The resistance of a wire of unit length and unit area of cross section is

1) Reactance

2) Conductance

3) Conductivity

4) Resistivity

12. An electric motor requires 220 V-of alternating current to run but the supplied alternating voltage is 110 V. Then the device used to run the motor is

1) Diode

2) Transistor

3) Transformer

4) Capacitor

13. A scientist wants to measure the value of acceleration due to gravity at a place, then the device

selected by the scientist is

1) Dynamo

2) Radar

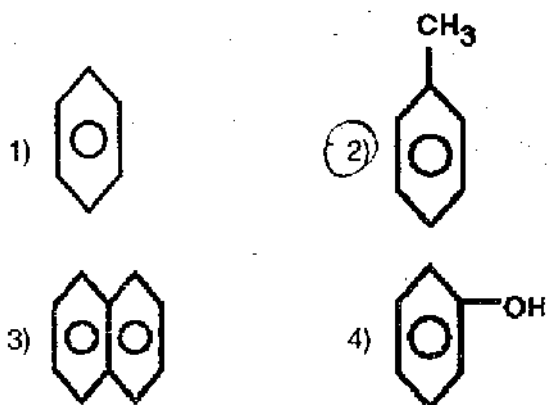3) Simple pendulum

4) Transducer

CHEMISTRY I

14. The substance which is chemically resistant, and can hold aqua regia

   1) Ceramics

   2) Glass

   3) Fibre

   4) Thermosetting .plastic

15. China dish is

   1) Brittle and heat resistant

   2) Durable and heat, resistant

   3) Brittle and corrosive

   4) Durable and non-corrosive

16. The structure of Toluene is represented by

17. In saponification process, the fatty acid present in the oils is neutralised by adding

   1) Sodium hydroxide

   2) Aluminum hydroxide

   3) Calcium hydroxide

   4) Magnesium hydroxide

18. Diabetic patients sometimes use this artificial sweeteners

   1) Glycerol   2) Cane Sugar

   3) Brown Sugar   4) Molasses

19. The technique through which Gold and Silver are refined

    1) Electrolytic refining

    2) Vacuum melting

    3) Liquation process

    4) Zone refining

20. Identify the correctly matched set.

1) Foot ball inflated inside and then taken outside on a winter day shrinks slightly	a. Diffusion
2) Deep sea fish die when brought when brought to the surface	b. Graham's law of diffusion
3) A balloon filled with helium will deflate a little bit everyday	c. Charle's law
4) $r \alpha = \dfrac{1}{\sqrt{d}}$	d. Boyle's law

    1) 1 – b,   2 – c,   3 – a,   4 – d

    2) 1 – d,   2 – c,   3 – b,   4 – a

    3) 1 – c,   2 – d,   3 – a,   4 – b

    4) 1 – c,   2 – d,   3 – b,   4 – a

21. The shining finish is given to the walls is given by

    1) Calcium oxide

    2) Calcium Carbonate

    3) Calcium hydroxide

    4) Carbon-di-oxide

22. This does not possess water of crystallization

    1) potassium nitrate

    2) Gypsum

    3) Copper sulphate

    4) Cobalt chloride

23. Identify the wrong statement

    1) Higher the hydronium ion concentration, lower is the pH value

    2) Universal indicator is used: to judge how strong a given acid or base is

    3) As the pH value increases from 7 to 14, it represents increase in H^+ ion concentration in the solution

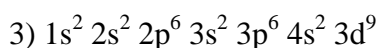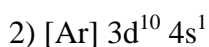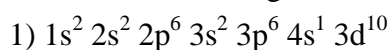   4) Values less than 7 on the pH scale represent an acidic solution

24. This is not true regarding the micelle.

1) The micelle stay in solution as a colloid

2) Micelle will not come together to precipitate

3) Thereto ion-ion repulsion

4) The dirt suspended in the micelles is very difficult to get rinsed off

25. This is not a characteristic of members of a homologous series.

1) They possess varying chemical properties

2) Their properties vary in regular and predictable manner

3) Their formulae fit the general molecular formula

4) Adjacent members differ by one carbon and two hydrogen atoms

26. The electronic configuration of copper can be represented in this/these way/ways

1) $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^1\ 3d^{10}$

2) $[Ar]\ 3d^{10}\ 4s^1$

3) $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^2\ 3d^9$

1) Only 1 & 2 are correct

2) Only 2 is correct

3) Only 2 and 3 are correct

4) Only 1 and 3 are correct

BIOLOGY

27. Which one of the following is correct matched

A	B
a. Hemp	i. Medicinal Plant
b. Cocoa	ii. Oil Plant
c. Leucas	iii. Fodder Plant
d. Fenugreek	iv. Beverage Plant
e. Palm	v. Fibre Plant
	vi. Spice Plant

1) a – v,   b – iv,   c – i,   d – vi,   e – ii

2) a – vi,   b – iii,   c – ii,   d – i,   e – iv

3) a – iv,   b – ii,   c – vi,   d – iii,   e – i

4) a – iii,   b – v,   c – vi,   d – ii,   e – i

28. Inflammatory reactions in allergy is brought about by

1) macrophages
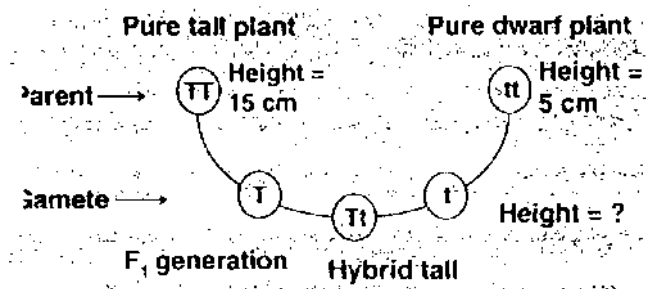
2) plasma cells

3) adipose tissue

4) mast cells

29. Assertion (A): Medulla oblongata controls involuntary activities like vomiting, coughing and

sneezing.

Reason (R): It has many nerve cells which control automatic reflexes.

1) 'A' is incorrect and 'R' is correct 'R' is not the correct explanation of 'A'

2) Both 'A' and 'R' are correct & 'R' explains 'A'

3) 'A' is correct and 'R' is incorrect 'R' is the correct explanation of 'A'

4) Both 'A' and 'R' are incorrect R' is not the correct explanation of 'A'

30. Find out the height of hybrid tall plant (Tt)::

1) 15 cm
2) 10

3) 5 cm
4) Can't say

31. The animals which belong to class pisces

A. Jelly fish
B. Cowfish

C. Starfish
D. Flying fish

1) Both 'A' and 'C'

2) Both 'B' and 'D'

3) Both 'A' and 'D'

4) Both 'B' and 'G'

32. Which statement is not true about Thyroxin **?**

1) Iron is very essential for the synthesis of Thyroxin

2) It regulates carbohydrates, proteins and fat metabolism in the body

3) Thyroid gland requires iodine to synthesize thyroxin

4) Thyroxin is also called Thyroid harmone

33. World AIDS Day is held on this day every year to increase awareness about it

1) December 10th

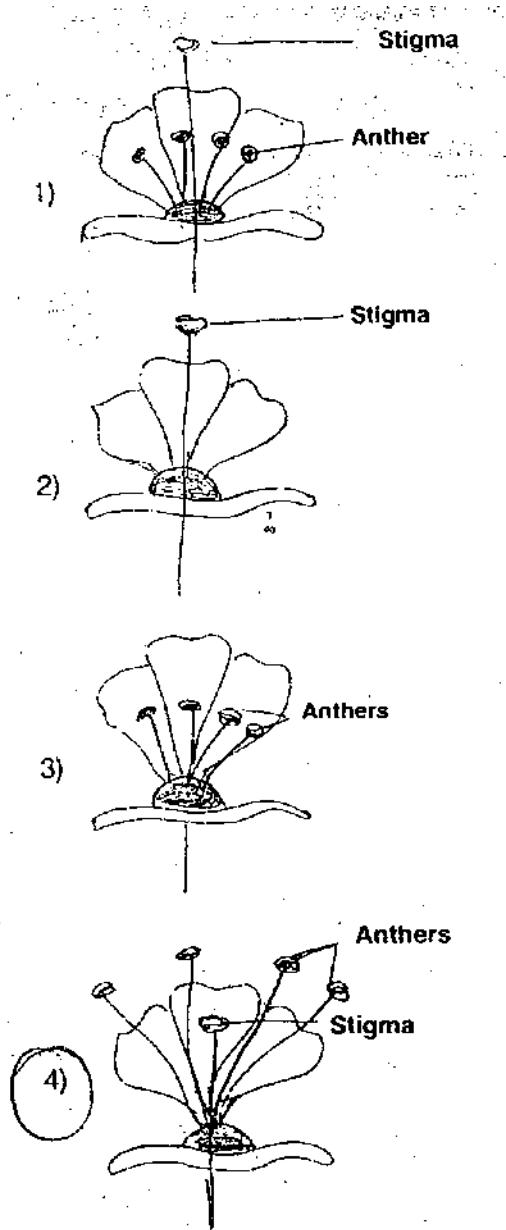2) December 21st

3) December 1st

4) December 31st

34. When a doctor is recording pulse he/s he is pressing on wrist exactly on a

1) Vein
2) Capillary

3) Artery'
4) Arteriole

35. Living cells of Xylem tissue

　　1) Xylem parenchyma

　　2) Xylem fibres
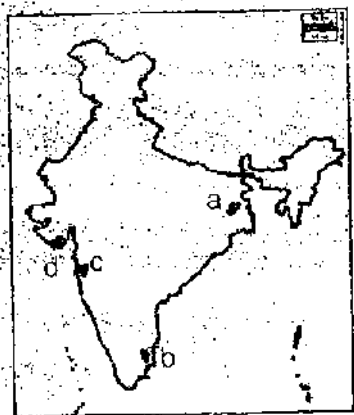
　　3) Xylem vessels

　　4) Tracheids

36. Identify the flower which will self .pollinate.

37. A pure tall plant can be identified from a hybrid tall plant

    1) by measuring the length of plant

    2) by spraying Gibberllins

    3) if all plants are tall after self pollination

    4) if all plants are dwarf after self pollination

38. An example for exotic breed of cow

    1) Frieswal

    2) Friesian

    3) Gir

    4) Sahiwal

39. In a food industry, food containing oil is prepared and wants to avoid development of foul smell. The substance that need to be added

    1) Antioxidants

    2) Preservatives

    3) Colourants

    4) Flavourants

40. Sudden heritable change

    1) Recombination

    2) Mutation

    3) Natural selection

    4) Segregation

HISTORY & BUSINESS STUDIES

41. Locations of trading centres of the Portuguese (P), the English (E), the Dutch (D) and the French (F) are shown ill the map given below:
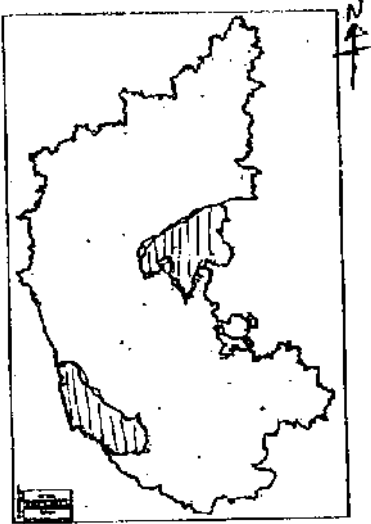

Which one of the following sets, represents the locations in the DPEF order ?

1) b, c, d, a   2) a, b, c, d

3) b, d, c, a   4) c, d, a, b

42. The map of unified Karnataka is given below: Identify the shaded territory.

1) Old Mysore State   2) Mumbai Karnataka

3) Madras Karnataka   4) Hyderabad Karnataka

43. Assertion (A): Trade capitalism flourished in European countries in 17 & 18th centuries.

Reason (R): Indian economy was immensely benefitted by Industrial Revolution in England.

1) A is true but 'R' is false

2) A is false but 'R' is true

3) Both 'A' and 'R' are true but 'R' is not the correct explanation of 'A'

4) Both 'A' and 'R' are true, and 'R' is the correct explanation of 'A'

44. Identify the right set from the following:

Leaders	Important reforms
A. Rajaram Mohan Roy	i. Universal brotherhood
B. Dayanand Saraswathi	ii. Protest against untouchability
C. Jyothiba Phule	iii. Blend of Indian and western thoughts
D. Mrs. Annie Besant	iv. Prohibition of sati
	v. Purification movement

1) A – v,   B – iii,   C – ii,   D – iv

2) A – iii,   B – iv,   C – i,   D – ii

3) A – iv,   B – v,   C – ii,   D – i

4) A – ii,   B – i,   C – iii,   D – iv

45. Pick out the wrong statement, with reference to the effects of the revolt of 1857.

1) The company administration came to an end in India

2) India was made a colony of the British Empire

3) India was granted 'Dominion Status' within the empire

4) Queen Victoria's Declaration, assured Indian's of religious freedom

46. Which of the following are correct, regarding the English education system in India?

a. The Western science and technology were introduced in India

b. The study of Western literature and history charged Indians with the spirit of nationalism

c. Sanskrit and Persian educational institutions were fully patronized by the English

d. English became the link language and promoted unity of Indians

1) a, b and d   2) c and d

3) a, c and d   4) b and c

47. Read the following statements:

a. promoting the use of indigenously produced goods in India

b. boycott of foreign goods
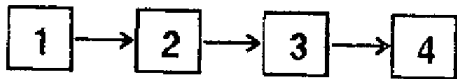
c. establishment of national educational institutions

Which one of the following movements represents the above mentioned characteristics?

1) Home Rule   2) Swadeshi

3) Khilafat   4) Quit India

48. Assertion (A): The Congress leaders boycotted the Simon Commission.

Reason (R): Lala Lajpath Rai died due to police caning.

1) Both 'A' and 'R' are true, but 'R' is not the correct explanation of 'A'

2) 'A' is true but 'R' is false

3) 'A' is false but 'R' is true

4) Both 'A' and 'R' are true and 'R' is the correct explanation of 'A'

49. Consider the statement given below and select the correct explanation from the responses given thereafter:
The National Conference Leader and Raja Hari Singh merged Kashmir into the Indian Union, in 1947.

1) Pakistan had communist Government

2) India was not a member of the American Block

3) India had a Democratic Republican Constitution

4) Pakistan was neutral in power politics

50. Which of the following statements are correct regarding the fall of the Soviet Union in 1991?

A. Rise of the U.S.A. as the lone super power

B. The Commonwealth of Independent States (CIS) became a strong rival of the U.S.A

C. End of the cold war

D. The CIS overpowered the U.S.A. in the field of space technology

51. The course of rise of modern China is depicted in the following flow diagram. Identify the correct sequence.

a. The Rise of People's Republic

b. The Great Leap Forward

c. The Long March

d. Democratic Revolution under Sun-Yat-Sen

1) 1c, 2b, 3a, 4d

2) 1d, 2c, 3a, 4b

3) 1b, 2d, 3c, 4a

4) 1a, 2b, 3d, 4c

52. Assertion (A): The RBI is called the Mother of Banks.

Reason (R): The RBI formulates the monetary policy which should be followed by all other banks.

1) 'A' and 'R' are true and 'R' is the correct explanation of 'A'

2) 'A' and 'R' are true, but 'R' is not the correct explanation of 'A'

3) 'A' is true but 'R' is false

4) 'R' is true but 'A' is false

53. Which one of the following is not a feature of General Insurance?

1) risk is uncertain

2) law of indemnity is applicable

3) lump sum payment of premium

4) it's for a long period

54. Consider the following list of business organisations of India:

a. Tata Consultancy Services

b. Iron and Steel Industry at Rourkela

c. Thermal Power Station at Raichur

d. Ashok Leyland Company

e. Karnataka Silk Industries Corporation

f. MTR Chain of Shops and Restaurants

g. SAM Tours and Travels

h. The ONGC (Oil and Natural Gas Commission)

Which of these are the outcome of entrepreneurship?

1) a, c, f, g   2) c, d, g, h

3) a, d, f, g   4) b, d, f, h

55. Which of the following are associated with globalization?

a. UNESCO   b. INTELSAT

c. I.L.O   d. W.T.O.

e. BRICS   f. W.I.P.O.

g. I.M.F.   h. M.N.C.'s

1) d, a, e, g   2) d, f, g, h

3) a, c, e, g   4) b, c, e, h

56. Match column – I and column – II and identify the correct answer

Column – I	Column – II
A. Udhampur	1. Hill Station
B. Ranikhet	2. Plateau
C Burzil	3. Dune
D. Ladakh	4. Mountain Pass

1) A – 4,   B – 2,   C – 3,   D – 1

2) A – 3,   B – 1,   C – 4,   D – 2

3) A – 2,   B – 3,   C – 4,   D – 1

4) A – 1,   B – 4,   C – 2,   D – 3

57. The highest peak in the Eastern Ghats is

1) Anaimudi   2) Mt. Gurushikar

3) Astamba Dhongar   4) Armakonda

58. Identify the correct matching:

A. Kandla   Tidal Port of India

B. Vishakapatnam   Deepest Port of India

C. Paradeep   Substitute Port of Kolkata

D. Karwar   Seabird Naval Port

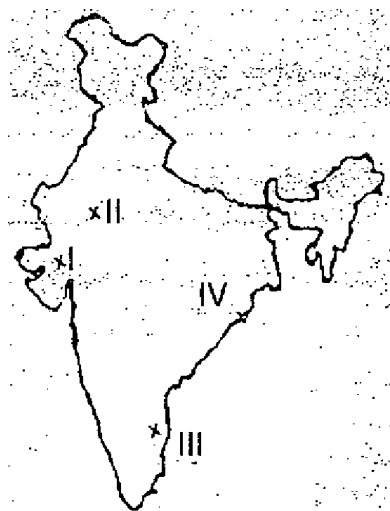1) A, B and D   2) A, C and D

3) A, B and C   4) B and D

59. Circar Coast is

1) Northern part of West Coastal plain

2) Southern part of East Coastal plain

3) Northern part of East Coastal plain

4) Southern part of West Coastal plain

60. The place which experiences minimum and maximum and maximum temperature of – 28.3°C and 15°C respectively is

1) Srinagar   2) Leh

3) Simla   4) Kulu

61. Match the lakes on the map of India (I, II, III, IV) with their respective names.

A. Sambhar   B. Chilka

C. Kolleru   D. Nal

1) A – II,	B – IV,	C – III,	D – I
2) A – IV,	B – III,	C – I,	D – II
3) A – II,	B – III,	C – IV,	D – I
4) A – I,	B – II,	C – III,	D – IV

62. Column – I is the list of States and Column – II is the names of rainfall during April and May. Match it.

Column – I	Column – II
A. Kerala	1. Andhis
B. Karnataka	2. Kalabaisakhi
C Uttar Pradesh	3. Coffee
D. West Bengal	4. Mango Showers

1) A – 3,	B – 4,	C – 2,	D – 1
2) A – 1,	B – 2,	C – 3,	D – 4
3) A – 4,	B – 3,	C – 1,	D – 2
4) A – 2,	B – 1,	C – 4,	D – 3

63. Read these statements and Identify the type of forests.

i. They are seen in 75-250 cm of rainfall areas

ii. They covered 66% of the total area of forests in India

iii. Teak Sal, Rosewood and Sandalwood are important trees

1) Evergreen Vegetation

2) Tropical Grassland

3) Alpine forests

4) Tropical Deciduous forests

64. Assertion: (A) Tank Irrigation is practiced in Tamil Nadu.

Reason : (R) The slope of the terrain does not permit canal irrigation

1) Both 'A' and 'R are true and 'R' is the correct explanation of 'A'

2) Both 'A' and 'R' are true but 'R' does not explain of 'A'

3) 'A' is true but 'R' is false

4) 'A' is false but 'R' is true

65. Column – I is the list of States and Column – II is the mineral production. Match it.

Column – I	Column – II
A. Jharkhand	1. Mica
B. Odisha	2. Coal
C Andhra Pradesh	3. Thorium
D. Kerala	4. Bauxite

1) A – 2,   B – 4,   C – 1,   D – 3

2) A – 3,   B – 1,   C – 4,   D – 2

3) A – 3,   B – 4,   C – 2,   D – 1

4) A – 1,   B – 2,   C – 3,   D – 4

66. 'Slash and burn' primitive form of cultivation in Jharkhand is called

1) Bewar   2) Podu

3) Waltre   4) Kuruwa

67. The practice of untouchability is dying down because of the gradual increase in

1) Income   2) Social Status

3) Occupation   4) Literacy

68. Read the statements and identify the correct answer:

i. It leads to sufficient expertise

ii. Training and skill

iii. Helped to earn economic benefits

iv. It creates economic strata

1) Discrimination in Labour

2) Division of Class

3) Division of Labour

4) Unemployment

69. Organized and directed towards specific goal its aims to bring about social change is called

1) Movement

2) Mobs

3) Riots

4) Group Clashes

70. Industrialists will have to mandatorily contribute Rs. 20,000 per child labour to the welfare fund who violate the law of

1) Rehabilitation Welfare Fund of Child Labours

2) Child Labour Prohibition and Control Act, 1986

3) National Child Labour Project, 1988

4) Child Labour Eradication and Rehabilitation Act, 2006

POLITICAL SCIENCE AND ECONOMICS

71. "This World in arms is not spending money alone; It is spending the sweat of its Labourers; genius of its scientists, the hopes of its children" – This statement is given by

1) Mahatma Gandhiji

2) Eisenhower

3) Nelson Mandela

4) Jawaharlal Nehru

72. India is facing intense Economic inequality. The main reasons for it

A. Operation of multinational companies

B. High Salary Syndrome

C. Principle of Progressive Taxation

D. White collar jobs

E. Reservation Facilities

Which of the above statements are True?

1) A, B and E   2) B, D and E

3) A, B and D   4) C, D and E

73. Column – A is the list of Agencies of UNO, Column – B is the list of years of establishment and Column – C is the list of Head Quarters.

Column – A   Column – B   Column – C

  A. FAO   E. 1948   I. Paris

  B. WHO   F. 1947   J. Rome

  C. UNESCO   G. 1945   K. Washington

  D. IBRD   H. 1946   L. Geneva

Which one of the following correctly matched set?

1) AEL, BGK, CFJ, DHI

2) AGJ, BEL, CHI, DFK

3) AHI, BFI, CGK, DEL

4) AHK, BEI, CFJ, DGL

74. Which one of the following is correctly matched?

  A. Kargil War   India and Pakistan

  B. Panchasheela   India and China

  C. LTTE   India and Nepal

  D. Twenty Years Treaty   India and Russia

     of Co-operation

Choices:

1) A, B and C only

2) A, C and D only

3) B, C and D only

4) A, B and D only

75. Read the following.

  A. It divided the World into two power biocs after II world war

  B. America and Russia took the leadership of these blocs

  C. Polarization of power took place under the concepts of Democracy and Communism

  D. India was neutral in it

Which one of the following represents the above characteristics?

1) Colonialism

2) Disarmament

3) Terrorism

4) Cold War

76. Identify the correct combination of statements related to 'NITI' Ayoga.

A. Substitute Institution of National Planning Commission

B. Established on 01 January 2015

C. Finance Minister of Govt. of India is a Chairman of this institute

D. Sindhushree Khullar appointed as the Chief Executive Officer of this institute

1) A, B and D only

2) A and B only

3) B, C and D only

4) A, B and C only

77. Identify the correct choice of matched items in column – 'A' with those of Column – 'B'.

Column – A	Column – B
A. White Revolution	i. Production of Eggs
B. Silver Revolution	ii. Production of Oil seeds
C. Golden Revolution	iii. Production of Milk
D. Red Revolution	iv. Production of Meat
	v. Production of Flowers/Fruits

Choices:

1) A – I,   B – III,   C – V,   D – II

2) A – III,   B – IV,   C – I,   D – II

3) A – I,   B – III,   C – V,   D – IV

4) A – III,   B – I,   C – V,   D – IV

78. The main objective of 'PURA' project is

1) to provide shelter for shelterless people in Urban areas

2) to eliminate rural poverty and unemployment

3) to provide Urban amenities in rural areas

4) expansion and modernization of Urban areas

79. Choose the correct sequence to indicate the following statements as True (T) or False (F).

A. In Public Finance Government calculates their income before hand and then spend it accordingly

B. Public Financial transactions are kept confidential

C. In Public Finance, when government saves money, growth is stunted

Choices:

1) TTF   2) FFT

3) TFT   4) FTF

80. The following is the list of taxes imposed by government

A. Excise duty

B. Income Tax

C. Corporate Tax

D. Stamp Duty

E. Service Tax

F. Import-Export Tax

Which one of the following groups indicates direct and indirect Taxes respectively?

1) ADE and BCF

2) BEF and ACD

3) BCD and AEF

4) ABF and CDE

MATHEMATICS

81. If m and n are the roots of $x^2 - px + q = 0$ then the value of $p^3 - 3pq$ is

1) $m^3 + n^3$

2) $m^3 - n^3$

3) $m^2 + n^3 + mn$

4) $m^3 - n^3 + mn$

82. There are 10 points in a plane of which 4 are collinear, the maximum number of straight line that can be drawn from these points will be

1) 40   2) 45

3) 46   4) 36

83. $\sqrt{8 + 2\sqrt{15}} - \sqrt{8 - 2\sqrt{15}}$ is

1) $2\sqrt{5}$

2) $\sqrt{8}$

3) $\sqrt{12}$

4) $\sqrt{5}$

84. 'O' is a point in the $\triangle ABC$, OA, OB and OC are jointly and produced to meet BC, CA and AB at D, E and F respectively, then the value of $\dfrac{OD}{AB} + \dfrac{OE}{BE} + \dfrac{OF}{CF}$ is

1) 4   2) 3

3) 2   4) 1

85. The angle of elevation of the top of a tower from two points distant a and b (a > b) from its foot and in the same straight line from it are 30° and 60°. The height of the tower is

1) a + b

2) $\sqrt{ab}$

3) $\sqrt{a+b}$

4) ab

86. Sin $A - \dfrac{1}{2}$ then (Sin2A – CosA) is

1) $\dfrac{\sqrt{3}}{2}$

2) $\dfrac{1}{2}$

3) 1

4) 0

87. In an AP, the common difference is double the first term. If first term is 'a' then the nth term is

1) 2 an   2) (2n + 1) a

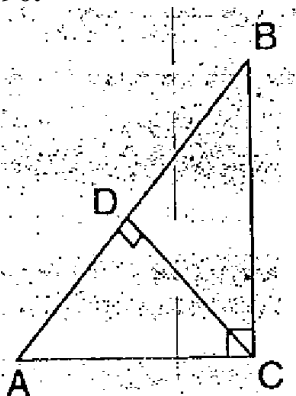3) (2n – 1)a   4) 2(n + 1)a

88. If the roots of the equation $x^2 - 2bx + 8 = 0$ are real, then 'b' must be

1) $> 2\sqrt{2}$

2) $< 2\sqrt{2}$

3) > 0

4) < 0

89. Sum of the squares of two consecutive odd numbers added by 6 is always divisible by

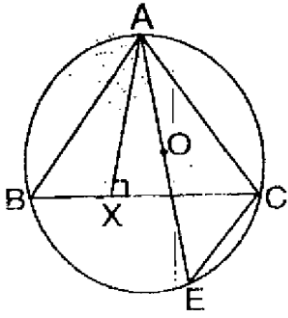1) 5   2) 6

3) 8   4) 9

90.

In $\triangle ABC$, $\lfloor ACB = 90°$, AC = 4 and BC = 3 then the value of CD × AB is

1) 20   2) 15

3) 12   4) 10

91.

In the given figure 'O' is the centre of circle. If AB = 6 and AC = 5 then the product of AO and AX is

1) 15

2) 20

3) 25

4) 30

92. Two solid right circular cones have the same height. The radii of their bases are a and b. They are melted and recast into a cylinder of same height. The radius of the base of the cylinder is

1) $\dfrac{a+b}{\sqrt{3}}$

2) $\dfrac{a+b}{3}$

3) $\dfrac{\sqrt{a+b}}{3}$

4) $\sqrt{\dfrac{a^2+b^2}{3}}$

93. In $\triangle ABC$, $\lfloor BAC = 90°$, $AD \perp BC$ and $\lfloor B = 45°$, AB = x then AD is

1) $\sqrt{2x}$

2) x

3) $\dfrac{x}{2}$

4) $\dfrac{x}{\sqrt{2}}$

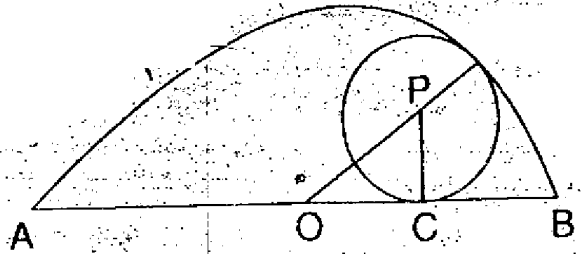**94.** Bhavana is one among 7 Badminton player. The probability of selecting Bhavana as player in 5 players team is

1) $\dfrac{1}{7}$

2) $\dfrac{2}{7}$

3) $\dfrac{4}{7}$

4) $\dfrac{5}{7}$

95. In a survey of 60 people it was found that 25 people read newspaper 'V', 26 read news paper 'P', 26 read newspaper 'K', Nine of them read both 'V' and 'K', 11 read both 'V' and 'P', Eight read both 'P' and 'K', Three read all three newspaper. The number of people who read exactly one newspaper is

1) 22

2) 30

3) 52

4) 77

96. The Quotient obtained on dividing $(8x^4 - 2x^2 + 6x - 7)$ by $(2x+1)$ is $(4x^2 + px^2 - qx + 3)$. The value of $(q - p)$ is

1) 0   2) -2

3) 2   4) 4

97.

In the above figure O and P are centres of circles AB = 10 cm and AC = 6 cm then diameter of smaller circle is

1) 8 cm   2) 4.8 cm

3) 4 cm   4) 2 cm

98. The points P, R and Q divide the line joining of A(–3, 8) and B(9, –4) into four equal parts. If 'P' is nearer to 'A', then 'P' is

1) (6, –1)   2) (3, 5)

3) (0, 5)   4) (–3, 5)

99. A cone and a hemisphere have equal bases and equal volumes the ratio of the heights of cone and hemisphere is

1) $1 : \sqrt{4}$ 2) $2 : 1$

3) $4 : 1$ 4) $\sqrt{2} : 1$

100. The mean and variance of eight observations are 9 and 6.25 respectively. The standard deviation of these scores is

1) 3   2) 2.5

3) 6.25   4) 9